

REMARKS

Favorable reconsideration of this application is requested in view of the above amendments and in light of the following remarks and discussion.

Entry of the amendments to the claims is requested, as the amendments place the application in clear condition for allowance or alternatively place the claims in better form for appeal. Specifically, the independent claims are amended to recite features of a dependent claim, which are not disclosed or rendered obvious by the applied references, and withdrawn claims are canceled.

Claims 1-5, 7, 8 and 20 are pending. Independent claims 1 and 20 are amended to recite features of dependent claim 6, and claims 6, 9-19 and 21-46 are canceled without prejudice or disclaimer.

In the Office Action claims 1-5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,262,787 to Kamoi et al. (Kamoi) in view of U.S. Patent No. 6,812,974 to Hinata et al. (Hinata). Claims 6 and 7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kamoi and Hinata in view of U.S. Patent No. 6,356,330 to Ando et al. (Ando). Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kamoi, Hinata and Ando in view of U.S. Patent No. 6,512,504 to Yamauchi et al. Claim 20 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,335,771 to Hiraishi in view of Kamoi. It is requested that the rejections of the claims be withdrawn, and that the claims be allowed, for the following reasons.

The present invention, as set forth in independent claim 1, is directed to a display apparatus. Independent claim 1 recites a spacer disposed between a pair of substrates. The spacer is fixed on at least one of the substrates. Each of the substrates has a film that is attached to an outer surface of a glass substrate and has a thickness greater than a thickness of

the glass substrate. Each of the glass substrate is formed to have a thickness that permits bending of the display apparatus.

Regarding the rejection of independent claim 1, Kamoi is directed to a polymer film liquid crystal display device. Hinata is directed to a liquid crystal device including flexible front- and back-side substrates 8a and 8b. Ando is directed to an active matrix liquid crystal display device, which includes a columnar spacer 301 disposed between substrates 214 and 215.

The Office Action relies on Kamoi to disclose substrates including films attached to outer surfaces of glass substrates, and on Hinata to disclose glass that permits bending. The Office Action further relies on Ando to disclose disposing a spacer between substrates, with the spacer fixed on one of the substrates.

It is submitted that a combination of these references to produce the claimed invention, as recited in independent claim 1, is improper for at least the following reasons.

As stated in MPEP § 2143.01, “[o]bviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves.” In this case, it is submitted that the cited prior art does not provide the required teaching, suggestion, or motivation to combine Kamoi, Hinata and Ando to produce the claimed invention of a spacer disposed between substrates, each of the substrates including a film attached to a thinner glass substrate, the thickness of the glass permitting bending. Rather, the only motivation to produce such a substrate is provided by the Applicants’ originally filed disclosure.

By way of further explanation, the claimed invention is directed to solving problems associated with a bendable display apparatus formed with a glass substrate. As described on page 2, lines 13-17 of the originally filed specification, it is not practical to use a resin film in

place of a glass substrate because of constraints imposed by the resin, such as film formation temperatures. The claimed invention is directed to solving the problem unique to the bendable display including the glass substrate, these problems including cracks and chips in the display. As set forth in the claims, the thickness of the film has been made greater than that of the glass substrate to solve such a problem.

As described from page 23, line 22 to page 24, line 4 of the originally filed specification, in a bendable display apparatus, however, the spacer arranged between the substrates is easily displaced, thereby causing the display to become defective. Thus, the present invention includes a spacer fixed to a substrate. Such a fixed spacer can be formed by using a material to form a film on a substrate, burning the film, exposing the film to light, and then developing the film, for example. However, because the substrate is exposed to high temperatures that can damage polymer, the substrate is advantageously formed from glass rather than the polymer film. In other words, a glass substrate is provided such that a fixed spacer, which is advantageously disposed in a bendable display apparatus for the above reasons, can be used. In this way, the claimed invention exhibits a unique effect and advantage by the combination of the display being bendable, the thickness of the film being thicker than that of the glass substrate, and the spacer being fixed.

On the other hand, the object of Kamoi is to overcome the problems unique to the use of a polymer film substrate. Thus, the thickness of the polarizing plate in Kamoi is determined to overcome the unevenness of color, and thus Kamoi does not disclose the concept of preventing cracks and chips in the substrate. Therefore, there is no motivation to combine the unique invention related to the polymer film substrate as in Kamoi with other the other references to Hinata and Ando which use glass substrates.

Hinata discloses a device in which a liquid crystal panel and an input unit are combined, and that the substrate of the input unit may be a flexible thin glass substrate.

However, the substrate focused on in Hinata is different from the substrate of the display apparatus of present invention. Thus, in Hinata, each of the substrates does not have a glass substrate and a film that is attached to an outer surface of the glass substrate. Further, a film such as a polarizer plate is unnecessary because an optical material like a liquid crystal is included between the substrates of the input unit. Thus, the substrate of the input unit of Hinata is not related to the glass substrate of the present invention, and there is no motivation whatsoever to combine the polarizer plates of the other references with the substrate of the input unit in which the polarizer plate is unnecessary. The device as a whole of Hinata is not intended to be positively bent. Although the input unit and the LC panel become extremely recessed or deformed in part, the invention falls under the category of a general flat display apparatus which does not bend, and there is no need to consider cracks and chips in the substrate. Therefore, the bending in the invention of Hinata is different from the bending in the present invention.

Ando does not disclose or suggest that the glass substrate is thin enough to be bendable, and thus does not disclose or suggest protecting the glass substrate from cracks and chips.

For these reasons it is submitted that the above rejection of independent claim 1 is based on the improper application of hindsight considerations. It is well settled that it is impermissible simply to engage in hindsight reconstruction of the claimed invention, using Applicants' structure as a template and selecting elements from the references to fill in the gaps.¹ Recognizing, after the fact, that a modification of the prior art would provide an improvement or advantage, without suggestion thereof by the prior art, rather than dictating a conclusion of obviousness, is an indication of improper application of hindsight

¹ *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991).

considerations. Simplicity and hindsight are not proper criteria for resolving obviousness.² Further, it is submitted that the “fact that references can be combined or modified is not sufficient to establish *prima facie* obviousness.”³ Therefore, an improper “obvious to try” rationale is applied in the Office Action.⁴ Specifically, it is submitted that none of the references teaches or suggests the desirability of the claimed features of a spacer disposed between substrates, each of the substrates including a film attached to a thinner glass substrate, the thickness of the glass permitting bending.

For these reasons it is requested that the rejection of independent claim 1 be withdrawn, and that the independent claim be allowed.

Regarding the rejection of independent claim 20, Hiraishi is directed to an LCD. Inasmuch as the combination Hiraishi and Hinata does not disclose or render obvious the claimed features of a spacer, in combination with the other features recited in the independent claim, it is submitted that independent claim 20 is allowable for reasons similar to those discussed above with respect to independent claim 1. Allowance of independent claim 20 is therefore requested.

Claims 2-5, 7 and 8 are also allowable for the same reasons as independent claim 1 from which they depend, as well as for their own features. The allowance of dependent claims 2-5, 7 and 8 is therefore requested.

Consequently, for the reasons discussed in detail above, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. Therefore, a Notice of Allowance is earnestly solicited.

² *In re Warner*, 397 F.2d 1011, 154 USPQ 173 (CCPA 1967).

³ See Heading under MPEP 2143.01.

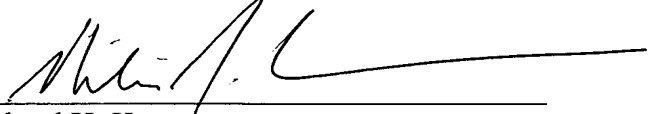
⁴ See MPEP 2145 X.B.

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Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact the undersigned representative at the below listed telephone number.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Eckhard H. Kuesters
Attorney of Record
Registration No. 28,870

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)

Philip J. Hoffmann
Registration No. 46,340

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